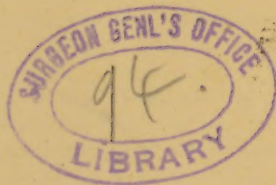
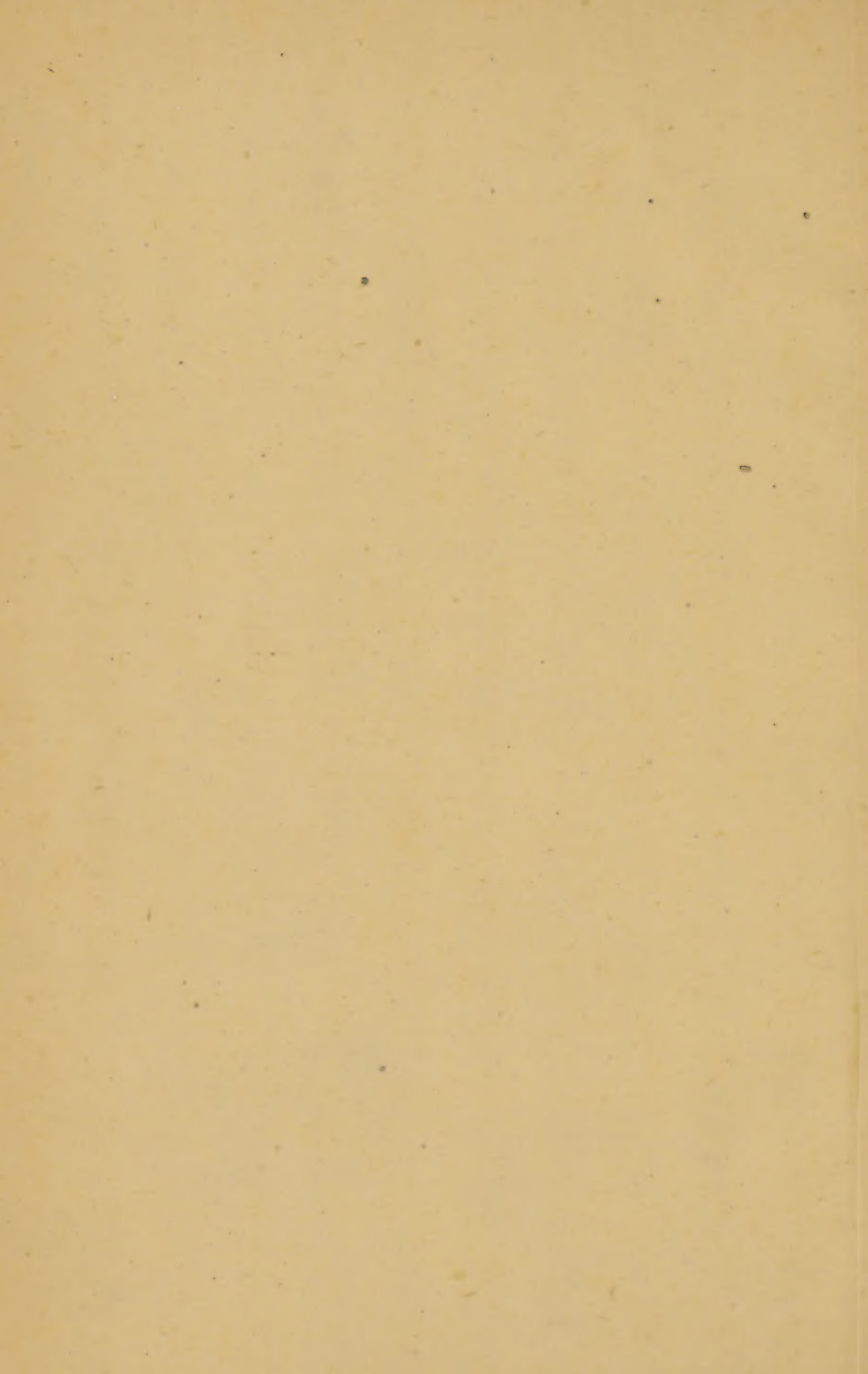


Williams (E. H.)

Low. power objectives
in microscopic diagnosis.





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Williams (S.H.) ✓

**LOW-POWER OBJECTIVES IN MICROSCOPIC
DIAGNOSIS.**

To the Editor of THE MEDICAL NEWS,

SIR: In this day of microscopic investigations in the diagnosis of diseases, we find almost every practitioner of medicine in possession of a more or less valuable microscope, and doing a certain amount of microscopic work in some line or other. It is to be feared that the majority of these would-be investigators are led to the purchase of a microscope more from the fact that it is a popular "fad" than from real motives of investigation, or as an instrument facilitating the diagnosis of many diseases; but be that as it may, the fact remains that very few physicians not specialists in microscopic work are able to make correct diagnoses of even simple growths and neoplasms. I have observed, even among men who paid considerable attention to microscopic manipulation, that very few are able to tell with any certainty the difference between even well-marked benign and malignant growths.

There are certainly some good reasons for this, one of which is undoubtedly the fact that most of these men have taken up microscopic study after leaving institutions in which competent instruction in some of the fundamental principles of microscopy is given; but from personal observation I believe that the real difficulty lies in the fact that the majority of persons do not use objectives of proper magnifying power. There seems to be a fear of using too low magnifying power, and consequently the opposite result follows, and we find altogether too high a power being used.



The majority of amateurs seem to feel that any magnifying power of less than 500 diameters is too low, while experience shows that a power of about 100 diameters is much better for the ordinary diagnosis of tumors. With a power of 500 diameters the field of vision is extremely limited, and one sees more of the individual cells than of the general arrangement of structures. In other words, he looks for special landmarks and avoids the "bird's-eye" view. This, I believe, is the true fault. A field of the microscope may justly be compared to a landscape, with the landmarks of clumps of trees, rocks, etc., represented by clumps of cells and various structures. No person, in attempting to recognize a new country, would look at individual trees or stones, but would rather take a general view of the whole from some hill-top, and then confirm the opinion thus formed by more minute examination of the woods and plains. Just so with the "microscopic landscape" of a new tumor. The low power (say, 100 diameters) is the bird's-eye view, and the grouping and arrangement of cells will give a better clew to diagnosis than individual cells can, no matter how well stained or how clearly defined by the lens.

It seems almost impossible to shake from the minds of the general mass of physicians the idea that each neoplasm should have its own particular characteristic cell, peculiar only to itself. I believe it is the remains of this old idea that leads to the use of high-power lenses in attempted diagnosis. When the amateur microscopist will shake off this idea and confine his attention more to general views with lower power objectives, I believe he will find it much easier to make correct diagnoses, at least of benign and malignant growths.

Very respectfully yours,

E. H. WILLIAMS.

IOWA CITY, IOWA.

